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ABSTRACT

To assist librarians in selecting more relevant resources and provide better user services, 2,805 citations from 31 dissertations were analyzed according to publication form, periodical title, subject, time span, language, and publishers. Dissertations were selected from State University of New York at Buffalo (SUNYAB) business and management Ph.D. candidates and incoming faculty who completed their doctoral work elsewhere. Data on the availability of cited materials in the SUNYAB libraries were gathered. Results showed that: (1) nearly 50 percent of the materials cited were periodicals, (2) 78 percent of the periodicals referred to 62 titles, (3) the subjects for monographs and serials were generally drawn from Library of Congress classifications HB through HJ, (4) 70 percent of the references were ten years old or less, (5) nearly all cited materials were in English, (6) the type of publisher ranking first varied with publication form, and (7) SUNYAB libraries held more than 85 percent of cited materials. The resulting data can serve as a guideline in defining an acquisition and development policy for the business/management collection. (Author/KP)

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BUSINESS/MANAGEMENT RESEARCH CHARACTERISTICS AND COLLECTION EVALUATION:

A CITATION ANALYSIS OF DISSERTATIONS

by

Charles J. Popovich

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A B S T R A C T

The citations from dissertations of Ph.D. candidates in the field of business/management were analyzed. The characteristics studied were publication form, periodical title, subject, time span, language and publisher. In addition, data was gathered which revealed the extent materials were owned by the State University of New York at Buffalo (SUNYAB) Libraries. The study was based on 2,805 citations drawn from thirty-one dissertations (thirteen SUNYAB--eighteen outside SUNYAB). The results showed: (1) that nearly 50% of the materials cited were periodicals, slightly more than 30% were monographs, approximately 10% were serials and 10% the remaining forms of publications; (2) that 78% of the periodicals referred to sixty-two titles; (3) that the subjects for monographs and serials were generally drawn from the Library of Congress classifications HB through HJ; (4) that 70% of the references were ten years old or less; (5) that nearly all cited materials were in the English language and (6) that the type of publisher ranking first varied with the form of publication. The ownership results indicated that SUNYAB Libraries held more than 85% of the cited materials. The resulting data can serve as a guideline in defining an acquisition and collection development policy for the business/management collection.

BUSINESS/MANAGEMENT RESEARCH CHARACTERISTICS AND COLLECTION EVALUATION: A CITATION ANALYSIS OF DISSERTATIONS

Faced with the problems of rising costs and an endless proliferation of library materials, how does a librarian select a limited number of resources while still meeting the needs of the clientele? Potential solutions to this problem involve learning more about the research characteristics of the library user and examining the relative strength and weakness of the library collection. The approach employed was a citation analysis of dissertations depicting the characteristics of literature cited by Ph.D. candidates in the field of business/management. In addition, data was gathered which revealed the extent which the State University of New York at Buffalo (SUNYAB) Libraries owned the materials cited in the dissertations.

METHODOLOGY

A total of thirty-one dissertations were analyzed for such characteristics as (1) form of publications, i.e. periodicals, monographs, serials, doctoral dissertations, newspapers, reports, working papers, manuscripts, conference papers, and miscellaneous forms; (2) periodical titles most frequently cited; (3) subject dispersion of monographs and serials; (4) time span of materials used; (5) foreign language distribution; and (6) type of publisher. In addition, the ownership status of all materials was verified with the holdings of the SUNYAB Libraries.

Thirteen of the dissertations were completed at the School of Management at SUNYAB between February 1972 and February 1974. The subjects of the dissertations and the number completed during the years studied are listed in Table I.

Table I Dissertations Distributed by Subjects and Years (SUNYAB)

Subjects	Years 1972	1973	1974	Totals
Accounting	2	1	-	3
Finance	2	1	1	4
Industrial Relations	1	-	1	2
Marketing	1	1	-	2
Organization & Behavioral Sciences	-	-	1	1
Quantative Methods	1	-	-	1
TOTALS	7	3	3	13

Eighteen of the dissertations were those of incoming faculty members who became affiliated with the School of Management at SUNYAB between September 1972 and September 1974. So that a representative number of dissertations would be considered from various institutions, only those faculty completing their doctoral work outside SUNYAB were included in this study. A list of the schools and the number of dissertations pertaining to each is as follows:

Berkeley	(3)	Minnesota	(1)
Carnegie-Mellon	(1)	NYU	(1)
Cornell	(2)	Pennsylvania	(1).
Harvard	(1)	Purdue	(2)
Illinois	(2)	Rochester	(1)
Kansas	(1)	Southern California	(1)
MIT	(1)		

The reason this group of dissertations was studied is threefold: (1) the effects of a local situation on the research findings would be avoided; (2) the subject expertise of new faculty, denoted by the dissertations, may suggest current trends and emphasis in SUNYAB's business/management program and (3) it was assumed information from these dissertations would reflect research interests of the faculty. The subjects and number of dissertations completed during a particular year are included in Table 2.

Table 2 Dissertations Distributed by Subjects and Years (Outside SUNYAB)

Subject	Years								
	1953	1961	1967	1969	1971	1972	1973	1974	Totals
Accounting	-	-	-	-	1	1	1	-	3
Economics	-	-	-	1	-	-	1	-	2
Finance	-	-	-	-	-	-	1	-	1
Health Care Management	-	-	-	-	-	-	-	1	1
Industrial Relations	-	-	1	-	-	-	1	-	2
Marketing	-	-	-	-	-	-	-	2	2
Organization & Behaviorial Sciences	-	1	-	1	-	1	-	2	5
Quantative Methods	-	-	-	-	-	-	-	1	1
Statistics	1	-	-	-	-	-	-	-	1
TOTALS	1	1	1	2	1	2	4	6	18

In recording information from the dissertations the following procedures were used:

1. If a source was cited two or more times in the same dissertation, it was counted only once.
2. If a citation was not a standard bibliographic reference, it was excluded from the study. Examples are (1) a list of newspapers consulted -- Oakland Tribune, Detroit Free Press, Baltimore Sun, etc. and (2) references to cities where interviews were conducted -- Dayton, Omaha, Seattle, etc.
3. Each reference was checked against the card catalog or the serials record to determine whether it was held by the SUNYAB Libraries. If there was any doubt about SUNYAB actually owning the source the item was physically checked for its location.
4. If a source was not owned by the SUNYAB Libraries but additional information was necessary, standard bibliographies and printed library catalogs were searched for the missing information.
5. The language of a cited publication was defined by the language of its title.

6. Classifying a citation by form was dependent upon the manner in which the author of the dissertation cited the material and the investigator's judgement.

As the citations from the dissertation bibliographies were verified the information was recorded on a twenty column code sheet. Table 3 shows the types of information included for each citation.

Table 3 Coding of Information

Columns	Information
1- 2	Author of dissertation (1 through 31)
3- 4	Year dissertation was completed
5- 6	Year of citation
7- 8	Form of publication
9	Ownership status (SUNYAB)
10	Type of publisher
11	Language of the publication
12-14	Number for periodicals or serials
15-16	Library of Congress classification (letters)
17-20	Library of Congress classification (numbers)

The information was ultimately keypunched onto Hollerith cards. The SPSS[1] program was used in tabulating and cross tabulating the data on a CDC (Contral Data Corporation) 6400 computer.

The thirty-one dissertations produced 2,805 citations. The range and arithmetic mean of citations per dissertation are indicated in Table 4.

Table 4 Distribution of Citations by Range and Mean

Distribution Category	SUNYAB	Outside of SUNYAB	Overall
Range	40-221	15-184	15-221
Mean	91.4	89.8	90.5

PREVIOUS STUDIES

In analyzing the thirty-one dissertations (thirteen SUNYAB -- eighteen outside SUNYAB), the method used was pioneered by Gross and Gross[2] in 1927. Their technique of "reference-counting" was an attempt to determine the most useful periodicals in the field of chemistry. Refinements of this study were performed by Fussler[3] when he investigated the use of serial and non-serial literature by researchers in the fields of chemistry and physics. Another investigation, this time in the social sciences, was conducted by McAnally[4] in his study of history literature. He used both books and journals published in 1903, 1939, and 1948 in an effort to determine whether there were distinct changes in the characteristics of materials used by researchers in the field of history. In addition to these studies, there have been a number of investigations utilyzing many similar procedures and techniques. The studies useful as a background for this particular evaluation were Stevens[5] (library materials in doctoral research), Seagly[6] (economics), Emerson[7] (doctoral research in a university library), Sarle[8] (business administration), Beckman[9] (research collections), Intrama[10] (public administration), Brace[11] (library and information science).

ASSUMPTION

A basic assumption which must be made in a citation analysis study is that a direct relationship exists between quantity (number of times cited) and the importance of materials.[12] Although this assumption is difficult to prove, investigators using this method have concluded that any defects which occur happen so infrequently they are likely to have little effect on the accuracy of results.[13]

In evaluating the SUNYAB Libraries' business/management collection, consideration of adequacy was based on the ownership of sources cited in the dissertations. This was interpreted as being supportive of business/management research and it was assumed that other doctoral candidates are likely to use the library resources in much the same manner. Naturally, the outcome will not provide all the answers about the library user and a business/management collection. Rather, the data is intended to serve as a guideline for the librarian in establishing acquisition and collection development policies.

FORM

An important consideration in allocating library funds is deciding what proportions of the budget to spend on periodicals, monographs, serials, etc. In this study the form of the publications was divided into ten categories. Table 5 indicates the distribution of the cited materials within the various groups.

Table 5 Distribution of Citations by Form

Form	Number of Citations	Percent
Periodicals	1377	49.1
Monographs	895	31.9
Serials	266	9.5
Doctoral Dissertations	57	2.0
Newspapers	56	2.0
Reports	48	1.7
Working Papers	22	0.8
Manuscripts	21	0.8
Conference Papers	17	0.6
Miscellaneous Forms	46	1.6
Total	2805	100.0

"A periodical has been defined...as a publication issued at regular intervals, at least twice a year."[14] As Table 5 indicates, periodicals constitute 49.1% of all the cited materials. A possible inference is that the field of business/management is dependent on current research materials and since periodicals provide that information they are of primary importance.

For the 1377 citations to periodicals Table 6 shows a listing of titles cited five times or more; the cumulative percentage to all periodical citations; and an indication if the periodical was indexed in Business Periodical Index (BPI), Public Affairs Information Service (PAIS), or Social Sciences Citation Index (SSCI).

Table 6 Periodicals

Rank	Titles	Citations: Number of Citations	Citations: Cumulative % to all periodical citations (1377)	Indexed: BPI	Indexed: PAIS	Indexed: SSCI
1	Journal of Finance	75	5.4	x	x	x
2	American Economic Review	65	10.1	x	x	x
3	Journal of Business	62	14.6	x	x	x
4	Accounting Review	55	18.6	x		x
5	Journal of Abnormal and Social Psychology	55	22.6			x
6	Administrative Science Quarterly	37	25.3	x	x	x
7	Management Science	35	27.9	x		x
8	Industrial and Labor Relations Review	34	30.4		x	x
9	Journal of Political Economy	33	32.8			x
10	Journal of Financial and Quantitative Analysis	32	35.1			x
11	Operations Research	30	37.3	x		x
12	Journal of Personality	25	39.1			x
13	Psychological Bulletin	24	40.8			x
14	Quarterly Journal of Economics	22	42.4			x
15	Harvard Business Review	21	43.9	x	x	x
16	Journal of Personality and Social Psychology	21	45.4			x
17	Monthly Labor Review	19	46.8	x	x	
18	Journal of Experimental Psychology	18	48.1			x
19	Review of Economics and Statistics	18	49.4	x		x
20	Journal of Marketing Research	17	50.6	x		
21	American Sociological Review	16	51.8			x
22	American Statistical Association Journal	16	53.0	x		x
23	Labor Law Journal	16	54.2	x	x	x
24	Journal of Accounting Research	14	55.2	x		x
25	Journal of Social Psychology	14	56.2			x
26	Econometrica	13	57.1			x
27	Psychological Report	12	58.0			x
28	Industrial Relations	11	58.8	x	x	x
29	Journal of Accounting	11	59.6	x	x	x
30	Journal of Marketing	11	60.4	x		x
31	Psychometrika	11	61.2			x
32	Business Week	10	61.9	x	x	
33	Psychological Review	10	62.6			x
34	Bell Journal of Economics and Management Science	9	63.3		x	x
35	Financial Analysts Journal	9	64.0	x		

Table 6 (Continued) Periodicals

Rank	Titles	Citations: Number of Citations	Citations: Cumulative % to all periodical citations (1377)	Indexed: BPI	Indexed: PAIS	Indexed: SSCI
36	Human Relations	9	64.7			
37	Journal of Applied Psychology	9	65.4			×
38	Journal of Consulting and Clinical Psychology	9	66.1			×
39	Journal of Industrial Economics	9	66.8	×	×	×
40	Journal of Psychology	9	67.5			×
41	Sloan Management Review	9	68.2	×	×	×
42	Air Pollution Control Association Journal	8	68.8			
43	American Federationist	8	69.4	×	×	
44	Annals of Mathematical Statistics	8	70.0			×
45	Medical Care	8	70.6			×
46	Southern Economic Journal	8	71.2		×	×
47	Annals of the American Academy of Political and Social Science	7	71.7		×	×
48	Economic Journal	7	72.2		×	×
49	Journal of Law and Economics	7	72.7		×	×
50	Management Accounting	7	73.2	×		
51	Academy of Management Journal	6	73.6	×		×
52	Behavioral Science	6	74.0			×
53	Datamation	6	74.4	×		×
54	Economica	6	74.8		×	×
55	International Economic Review	6	75.2			
56	Law and Contemporary Problems	6	75.6		×	×
57	Review of Economic Studies	6	76.0			×
58	American Political Science Review	5	76.4			×
59	American Psychologist	5	76.8			×
60	Inquiry	5	77.2		×	×
61	Kyklos	5	77.6		×	×
62	Labor History	5	78.0			×
	Miscellaneous Titles (Periodicals cited less than 5 times)	307	100.0			
	Totals	1377	100.0	25	23	53

Table 6 indicates that 78% of the references to periodicals or 1,070 citations pertain to the sixty-two sources listed. Although many of the titles are related to various fields, librarians may want to consider this list as an interdisciplinary core collection of periodicals pertinent to business/management. This information may be helpful in defining new periodicals to be acquired or as a guideline to filling-in backruns of current subscription titles.

Monographs were the second most frequently cited form of publication accounting for 31.1% of the sources. A monograph was defined as "a single volume dealing systematically and in detail with a single subject."[15] This high ranking is not too surprising since monographs contain many basic studies and classic works.

Those sources issued less frequently and regularly than periodicals and newspapers were defined as serials. "The term includes...annuals, numbered monograph series and the proceedings, transactions and memoirs of societies."[16] With an overall distribution of 9.5% and a third place ranking, it clearly indicates this form of publication is of lesser importance as a source of information.

The forms of publications in the six categories of doctoral dissertations, newspapers, reports, working papers, manuscripts, and conference papers represent a total of 7.9% of the citations. They were included as separate categories in order to examine the extent of their usage. It may be concluded, however, that these forms of publications were used only to a minimal degree in doctoral research in business/management.

The "miscellaneous forms" category included several types of materials not contained in the previously mentioned classifications; i.e. masters thesis, mimeographs, private communications, memorandums and unidentified forms. They represent a total of 46 sources or 1.6% of all citations. Except for the unidentified forms, which accounted for 0.9%, all categories in this grouping were represented at 0.2% or less. Consequently, this was the reason for amalgamating these sources under the heading "miscellaneous forms."

Table 7 shows comparative data for citations by form in dissertations from SUNYAB, outside SUNYAB, and for overall distribution.

Table 7 Comparative Data for Citations by Form

FORM	SUNYAB No.	SUNYAB %	OUTSIDE SUNYAB No.	OUTSIDE SUNYAB %	OVERALL DISTRIBUTION No.	OVERALL DISTRIBUTION %
Periodicals	604	50.8	773	47.8	1377	49.1
Monographs	360	30.3	535	33.1	895	31.9
Serials	100	8.4	166	10.3	266	9.5
Doctoral Dissertations	28	2.4	29	1.8	57	2.0
Newspapers	50	4.2	6	0.3	56	2.0
Reports	13	1.1	35	2.2	48	1.7
Working Papers	10	0.9	12	0.7	22	0.8
Manuscripts	7	0.6	14	0.9	21	0.8
Conference Papers	4	0.3	13	0.8	17	0.6
Miscellaneous Forms	12	1.0	34	2.1	46	1.6
Totals	1188	100.0	1617	100.0	2805	100.0

When comparing the number of citations for each form of publication, it is evident that there are sometimes significant differences between SUNYAB and outside SUNYAB dissertations. However, it is essential to compare the proportions for each form cited, i.e. the percentages representing periodicals, monographs, etc. In looking at the percentage figures a comparison of like categories shows only a few percent or a fraction of a percent difference. Thus, the forms of publications used by doctoral candidates in business/management at SUNYAB and those outside SUNYAB indicate a minimal difference in proportional distribution (percentages).

SUBJECT DISPERSION

The analysis of materials by subject could serve as a guideline in determining

the extent doctoral candidates in business/management rely on various types of literature in their field as well as outside their field. An awareness of these key areas would enable the librarian to select more relevant materials and thereby provide better service to the library user. In this study the Library of Congress classification provided the basis for defining subjects. The forms of publications analyzed were monographs and serials. The resulting subject dispersion is shown in Table 8.

Table 8

Subject Dispersion
(Monographs and Serials)

Rank	LC Classification		Citations		
			No.	%	Cumulative %
1	HF 5001-6351	Business	171	14.7	14.7
2	HD 4801-8942	Economics: Labor	134	11.5	26.2
3	HD 1-100	Economics: Production	125	10.8	37.0
4	BF	Psychology	95	8.2	45.2
5	HM-HX	Sociology	85	7.3	52.5
6	HG	Finance	74	6.4	58.9
7	HB	Economic Theory	70	6.0	64.9
8	Q	Science	57	4.9	69.8
9	HC	Economic History and Conditions: National Production	52	4.5	74.3
10	J	Political Science	51	4.4	78.7
11	H	Statistics	31	2.7	81.4
12	HF 1-4050	Commerce	28	2.4	83.8
13	T	Technology	20	1.7	85.5
14	R	Medicine	18	1.6	87.1
15	C-D-E-F	History	17	1.5	88.6
16	L	Education	16	1.3	89.9
17	HD 2321-4730	Economics: Industry	16	1.3	91.2
18	H	Social Sciences (General)	15	1.2	92.4
19	HD 9000-9999	Special Industries and Trades	8	0.7	93.1

Table 8 (Continued)

Subject Dispersion
(Monographs and Serials)

Rank	LC Classification		Citations		
			No.	%	Cumulative %
20	K	Law	7	0.6	93.7
21	HE	Transportation and Communication	3	0.3	94.0
22	HJ	Public Finance	2	0.2	94.2
23	U	Military Science	2	0.2	94.4
24	Z	Bibliography and Library Science	2	0.2	94.6
25	B	Philosophy	1	0.1	94.7
26	BJ	Ethics	1	0.1	94.8
27	HD 1401-2210	Agricultural Economics	1	0.1	94.9
28	V	Naval Science	1	0.1	95.0
	Unknown		58	5.0	100.0
		Total	1161	100.0	100.0

Generally, business/management materials are included in the Library of Congress classifications HB through HJ. For the 1,161 citations pertaining to monographs and serials, Table 8 shows that the first three subject rankings were HF 5001-6351 (Business) 14.7%, HD 4801-8942 (Economics: Labor) 11.5% and HD 1-100 (Economics: Production) 10.8%. Supporting literature was located in the classifications BF (Psychology) 8.2% and HM-HX (Sociology) 7.3%. Together these subject areas represent more than 50% of the 1,161 sources.

Table 9 shows a comparative dispersion of the ten leading Library of Congress subjects used in this study. They represent more than 75% of the subject sources in each category being compared, i.e. SUNYAB, outside SUNYAB and overall distribution.

Table 9 Comparative Subject Dispersion (In Percentages)

Rank	LC Classification		SUNYAB % of 460 Citations	Outside SUNYAB % of 701 Citations	Overall Distribution % of 1161 Citations
1	HF 5001-6351	Business	17.4	13.0	14.7
2	HD 4801-8942	Economics: Labor	19.4	6.4	11.5
3	HD 1-100	Economics: Production	17.6	6.3	10.8
4	BF	Psychology	5.2	10.1	8.2
5	HM-HX	Sociology	2.0	10.8	7.3
6	HG	Finance	8.7	4.9	6.4
7	HB	Economic Theory	7.2	5.3	6.0
8	Q	Science	4.6	5.1	4.9
9	HC	Economic History and Conditions: National Production	0.9	6.8	4.5
10	J	Political Science	1.1	6.6	4.4
	Totals for leading LC Subjects		84.1	75.3	78.7
	Miscellaneous Literature		13.5	18.0	16.3
	Unknown		2.4	6.7	5.0
		Totals	100.0	100.0	100.0

It is interesting to note, with the exception of HC (Economic History and Conditions: National Production), the majority of business/management materials (classifications HB-HJ) were from SUNYAB dissertations. Conversely, the majority of supporting literature (BF Psychology, HM-HX Sociology, etc.) was dominated by dissertations from outside SUNYAB. Data such as this can be used in helping to define the academic orientation of SUNYAB's business/management program and possibly in delineating the research interests of the School of Management faculty.

TIME SPAN

"Time span may be defined as the extent to which the research worker in a given field reaches back into the literature of the past to find useful information."[17] An awareness of the degree to which retrospective research prevails in the field of business/management can aid the librarian in establishing guidelines for selecting library materials and in weeding the collection. In this study the date of each dissertation was compared to the date of each citation appearing in the dissertation. Table 10 shows the distribution of time span by the form of publications.

Table 10 — Time Span of Citations by Form

	YEARS													
	0-5		6-10		11-15		16-20		21 +		Unknown		Total	
FORM	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Periodicals	589	42.7	415	30.1	195	14.2	82	6.0	96	7.0	--	--	1377	100.0
Monographs	322	36.0	270	30.2	130	14.5	79	8.8	93	10.4	1	0.1	895	100.0
Serials	98	36.8	74	27.8	47	17.7	18	6.8	26	9.8	3	1.1	266	100.0
Doctoral Dissertations	31	54.3	17	29.8	5	8.8	2	3.5	1	1.8	1	1.8	57	100.0
Newspapers	12	21.4	17	30.4	24	42.9	3	5.3	--	--	--	--	56	100.0
Reports	37	77.1	7	14.6	1	2.1	--	--	--	--	3	6.2	48	100.0
Working Papers	15	68.2	5	22.7	--	--	--	--	--	--	2	9.1	22	100.0
Manuscripts	8	38.1	2	9.5	1	4.8	--	--	--	--	10	47.6	21	100.0
Conference Papers	15	88.2	2	11.8	--	--	--	--	--	--	--	--	17	100.0
Miscellaneous Forms	25	54.4	10	21.7	2	4.3	--	--	--	--	9	19.6	46	100.0
Totals	1152	41.1	819	29.2	405	14.4	184	6.6	216	7.7	29	1.0	2805	100.0

In considering the totals for all forms of citations, an average of 41.1% (1,152 sources) were 5 years old or less. Periodicals, doctoral dissertations, reports, working papers, conference papers, and miscellaneous forms in the 0 to 5 year old category exceeded the average of 41.1% in terms of the proportion of current sources.

Table 11 indicates the distribution of time span by forms of publications in cumulative percentages.

Table 11 Time Span of Citations by Form (Cumulative Percentages)

Form	YEARS					
	0-5	6-10	11-15	16-20	21+	Unknown
Periodicals	42.7	72.8	87.0	93.0	100.0	
Monographs	36.0	66.2	80.7	89.5	99.9	100.0
Serials	36.8	64.6	82.3	39.1	98.9	100.0
Doctoral Dissertations	54.3	84.1	92.9	96.4	98.2	100.0
Newspapers	2.4	51.8	94.7	100.0		
Reports	77.1	91.7	93.8	--	--	100.0
Working Papers	68.2	90.9	--	--	--	100.0
Manuscripts	38.1	47.6	52.4	--	--	100.0
Conference Papers	88.2	100.0				
Miscellaneous Forms	54.4	76.1	80.4	--	--	100.0
Totals	41.1	70.3	84.7	91.3	99.0	100.0

More than 70% of all the cited materials were 10 years old or less and nearly 85% of all the sources were cited within 15 years. For the first ten years the time span of citations pertaining to periodicals, monographs and serials was 72.8%, 66.2% and 64.6% respectively. For a 15 year interval the time span by form was periodicals 87.0%, monographs 80.7%, and serials 82.3%. Based on the time span characteristic, the rate of usefulness seemed to decline even more rapidly for most other forms of publications.

Table 12 shows time span in cumulative percentages for the citations, dissertations from SUNYAB, outside SUNYAB, and by overall distribution.

Table 12 Time Span of Citations by Distribution (Cumulative Percentages

Distribution	YEARS					
	0-5	6-10	11-15	16-20	21+	Unknown
SUNYAB	36.0	66.3	82.0	88.9	97.6	100.0
Outside SUNYAB	45.0	73.3	86.8	93.1	100.0	
Overall Distribution	41.1	70.3	84.7	91.3	99.0	100.0

Although the low time span is more apparent in dissertations outside SUNYAB, a similar trend, though not as accelerated, is also evidenced in the SUNYAB dissertations.

It may be concluded there is a rather high obsolescence factor in business/management materials and recency of materials is a key consideration when building a collection or weeding it.

FOREIGN LANGUAGE

A study of the extent to which foreign language materials were used in business/management research revealed that it is practically non-existent. Of the 2,805 citations which were analyzed, four or 0.1% were to non-English titles. The distribution included two citations in French and one each in Spanish and German. All four citations were referenced in dissertations completed outside of SUNYAB. It should be noted the definition of foreign was based entirely on the language of the title being cited.

Ostensibly, the foreign language materials could be ignored and it would be a temptation to do so. However, the rise of multi-national corporations, the progress of Japanese, German, and Russian technology; advances of international practices in business/management activities, as well as other factors; may produce an added interest in international subjects. With these circumstances, an increased proportion of writings based on foreign literature may be forthcoming. At present, however, it appears that doctoral candidates in business/management make little use of research materials written in languages other than English.

TYPES OF PUBLISHERS

The decision to acquire certain library resources is sometimes based on the type of organization publishing the materials. To learn more about the publishers cited in business/management literature, the dissertations in this study were analyzed by categorizing the types of publishers into groups i.e.

commerical, association, government and university. The commercial publishers were defined as profit making organizations such as Prentice-Hall, McGraw-Hill, Praeger, etc. The names of association publishers were established by consulting the Encyclopedia of Associations.[18] The definition of government publishers were any municipal, state, federal or international agency of any government.[19] The university publishers were references cited as "university press." In addition, references were grouped as "unpublished" and "unknown." Table 13 indicates the results.

Table 13 Types of Publishers by Form

	PUBLISHERS													
	Comm.		Assoc.		Gov.		Univ.		Unpub.		Unknown		Total	
Form	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Periodicals	176	12.8	717	52.1	45	3.2	435	31.6	--	--	4	0.3	1377	100.0
Monographs	663	74.1	48	5.4	20	2.2	163	18.2	--	--	1	0.1	895	100.0
Serials	50	18.8	57	21.4	87	32.7	71	26.7	--	--	1	0.4	266	100.0
Doctoral Dissertations	--	--	--	--	--	--	--	--	57	100.0	--	--	57	100.0
Newspapers	56	100.0	--	--	--	--	--	--	--	--	--	--	56	100.0
Reports	1	2.1	3	6.3	5	10.4	17	35.4	21	43.8	1	2.0	48	100.0
Working Papers	--	--	--	--	--	--	--	--	22	100.0	--	--	22	100.0
Manuscripts	--	--	--	--	--	--	--	--	21	100.0	--	--	21	100.0
Conference Papers	--	--	--	--	--	--	--	--	17	100.0	--	--	17	100.0
Miscellaneous Forms	3	6.5	5	10.9	5	10.9	2	4.3	19	41.3	12	26.1	46	100.0
Totals	949	33.8	830	29.6	162	5.8	688	24.5	157	5.6	19	0.7	2805	100.0

The totals indicate commercial publishers (33.8%) were the most frequently cited. They were closely followed by associations (29.6%) and then university (24.5%). References to government publishers were minimal (5.8%).

In analyzing the types of publishers by form, it was learned periodicals by association publishers were the most frequently cited (52.1%). A relatively strong representation was also indicated by university publishers (31.6%).

The monograph form of publication was dominated by commercial publishers (74.1%) with university publishers a distant second (18.2%).

The serials form of publication was well distributed, the category most frequently cited, however, was government publishers (32.7%).

Doctoral dissertations, working papers, manuscripts and conference papers were in the category "unpublished" (100.0%) and newspapers were represented by commercial publishers (100.0%). The remaining forms of publications were distributed among the various categories of publishers.

Table 14 shows the distribution of percentages for the types of publishers in dissertations from SUNYAB, outside SUNYAB and by overall distribution.

Table 14 Type of Publisher By Distribution (In Percentages)

Distribution	PUBLISHER						
	Comm.	Assoc.	Gov.	Univ.	Unpub.	Unknown	Total
SUNYAB	34.4	27.0	4.4	28.2	5.6	0.4	100.0
Outside SUNYAB	33.4	31.5	6.8	21.8	5.6	0.9	100.0
Overall Distribution	33.8	29.6	5.8	24.5	5.6	0.7	100.0

Although there are differences between the categories of publishers for SUNYAB dissertations and those outside SUNYAB (6.4% or less), the data is closely parallel.

In conclusion it should be noted that distribution totals indicate three types of publishers (commercial, association and university) were clustered within 10% of one another and a fourth category (government) was cited infrequently. For a clearer picture, however, when considering the publisher in the acquisition of library materials, it is important to define the form of the publication. For business/management research the study results indicate the types of publishers ranking first were different for periodicals (association), monographs (commercial) and serials (government). In addition, the university publishers ranked second for all three forms of publications. It is also interesting to note that government publishers ranked first in the serials category even though they were referred to infrequently in the distribution totals. Many of the remaining forms of publications were in the "unpublished" category. Although they represent a small proportion of all the sources, these materials should also be given consideration when selecting

library resources for a business/management collection.

OWNERSHIP STATUS

Another important aspect of this study was to determine the extent to which the SUNYAB Libraries owned the materials cited in the dissertations. These results could be used to define the relative strength and weakness of the collection.

Of the 1,377 citations to periodicals indicated in Table 15, SUNYAB owned 95.8% of the materials. 89.3% of the monographs cited were available as well as 81.2% of the serials. References to newspapers were available 96.4% of the time but the remaining form of publications were sparsely held or non-existent.

Table 15 Ownership Status by Form

Form	OWNERSHIP					
	YES		NO		TOTAL	
	No.	%	No.	%	No.	%
Periodicals	1319	95.8	58	4.2	1377	100.0
Monographs	799	89.3	96	10.7	895	100.0
Serials	216	81.2	50	18.8	266	100.0
Doctoral Dissertations	14	24.6	43	75.4	57	100.0
Newspapers	54	96.4	2	3.6	56	100.0
Reports	1	2.1	47	97.9	48	100.0
Working Papers	--	--	22	100.0	22	100.0
Manuscripts	--	--	21	100.0	21	100.0
Conference Papers	--	--	17	100.0	17	100.0
Miscellaneous Forms	1	2.2	45	97.8	46	100.0
Totals	2404	85.7	401	14.3	2805	100.0

Although no library collection can be expected to include all needed research materials, the overall ownership figure of 85.7% is a fairly strong representation. Another positive factor to be noted is the ownership status by distribution represented in Table 16. This data indicates that ownership of materials cited in dissertations prepared at SUNYAB closely paralleled ownership

of materials cited in dissertations from outside SUNYAB. One possible inference is a balanced business/management collection based on relatively consistent findings.

Table 16 Ownership Status by Distribution (In Percentage)

	OWNERSHIP					
	YES		NO		TOTAL	
Distribution	No.	%	No.	%	No.	%
SUNYAB	1048	88.2	140	11.8	1188	100.0
Outside SUNYAB	1356	83.9	261	16.1	1617	100.0
Overall Distribution	2404	85.7	401	14.3	2805	100.0

Since there were no records indicating exactly when all these materials were acquired by the SUNYAB Libraries, it was impossible to determine whether they were owned at the time these dissertations were being prepared. However, Tables 15 and 16 do provide data on which to base an evaluation of SUNYAB's business/management collection. Perhaps the lone areas of collection weakness stem from the lack of items such as reports, working papers, manuscripts, etc. On the whole, the results of this evaluation indicate a library collection conducive to doctoral work in business/management.

SUMMARY

This citation analysis study examined the characteristics of literature--form, periodical title, subject, time span, language and publisher--from dissertations of Ph.D. candidates in the field of business/management. Also, data was gathered which defined the extent cited materials were owned by the SUNYAB Libraries. Being aware of this information could assist a librarian in selecting more relevant resources and thereby provide better service to the clientele. The methodology and results have been discussed in the previous sections.

The first characteristic analyzed was the form of publications. It was learned periodicals represented nearly 50% of all references, while slightly more than 30% of the references were to monographs and nearly 10% to serials. The other citations, approximately 10%, were distributed among the remaining forms of publications. There were no significant proportional differences between the forms of materials used by doctoral candidates in business/management at SUNYAB or outside SUNYAB.

Of the 1,377 citations to periodicals, Table 6 shows that 78% or 1,070 sources pertain to sixty-two titles.

The subject dispersion for monographs and serials was dominated by sources in the Library of Congress classifications HB through HJ. The areas of HF 5000-6351 (Business), HD 4801-8942 (Economics: Labor) and HD 1-100 (Economics: Production) represented more than 35% of the 1,161 sources. Most supporting literature was included in the classifications BF (Psychology) and HM-HX (Sociology). These five principal subject areas accounted for more than 50% of the 1,161 sources.

With the exception of HC (Economic History and Conditions: National Production), the subject materials for SUNYAB dissertations were predominantly sources in the HB through HJ classifications. The majority of supporting literature (BF Psychology, HM-HX Sociology, etc.) was contained in the dissertations from outside SUNYAB.

In regard to the time span of materials, more than 40% of the references were 5 years old or less and slightly more than 70% of the sources were cited within 10 years. The rate of obsolescence varied with the various forms of publications. For the three most cited forms, periodical literature became obsolete more rapidly than monographs and serials. The rate of usefulness seemed to decline even more rapidly for most other forms of publications. The low time span for materials was obvious for both SUNYAB and outside SUNYAB dissertations. It was more accelerated, however, in the latter group.

Nearly all the cited materials (99.9%) were published in the English language. At present, it seems evident that doctoral candidates in business/management are not seeking foreign language materials when preparing their dissertations.

An examination of the dissertations for the types of publishers most frequently cited indicated that commercial, association and university publishers clustered within 10% of one another. A fourth category, government, was cited infrequently. However, for a better understanding of the most common publishers for certain materials, it is important to define the form of the publication. For instance, the types of publishers ranking first were quite different for periodicals (association), monographs (commercial), and serials (government). Also, the university publishers ranked second for all three forms of publications. Many of the remaining forms of publications were in the "unpublished" category.

The fact SUNYAB Libraries owned 85.7% of the materials cited in all of the dissertations was quite favorable considering eighteen of the thirty-one dissertations had been prepared at institutions outside SUNYAB. The distribution of ownership by form of publication was 95.8% for periodicals, 89.3% for monographs, and 81.2% for other serials. Although the references to newspapers were accessible 96.4% of the time, the remaining form of publications were scantly held or completely unavailable. However, the total results indicate the SUNYAB Libraries could more than adequately accommodate doctoral work in business/management.

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